

was hence observed with some surprise that all plants on the outcrops in eastern Wake County, N. C. early in June had shed their seeds. Observation upon numerous herbarium specimens from throughout the range of the species indicate that in most cases the seeds have been shed by very early summer if not in the late spring. It hence would appear that seed-retention for 2-5 months after the death of the plants is of no particular survival advantage to the species and is indeed not characteristic of at least most populations of the species.

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FLORA OF MISSOURI^{1 2}

It would seem at first glance that hardly anything that might be looked for in a state flora has been left out of this vast work. On the basis of size one is reminded of Deam's *Flora of Indiana* but in many respects Dr. Steyermark's is a much more detailed study. Deam's was the result of long experience. This too represents nearly thirty years of progress on the Missouri flora since the publication in 1935 of E. J. Palmer's and Steyermark's *An Annotated Catalogue of the Flowering Plants of Missouri*. Twenty years ago many of us thought that Deam had achieved the ultimate in state floras, at least as compiled by one person. One is led to wonder if any individual botanist of the future will have the time, energy, ability, and inclination to surpass for any other state the work under review. Indeed, one might raise a question concerning the advisability of preparing similarly compendious treatments of adjacent states now that Missouri is so well done. Inevitably there would be much

¹Flora of Missouri by Julian A. Steyermark, Iowa State Univ. Press, Ames, Iowa. LXXXIII + 1725 pp. Nov. 1, 1963, \$18.50.

²We have been asked by the publishers to advise our readers that the date of publication was omitted from approximately the first 150 copies of the *Flora of Missouri*.

repetition of illustrative material, discussions and keys involving many of the same taxa.

After a lucidly written preface and introduction, there is a section of several pages entitled, "Flora and Vegetation" the emphasis here being on the characterization of floristic regions of the state. Future workers will be directed in their collecting by consulting the extensive lists, at the close of this section, of taxa that are known to occur nearby in adjacent states but have not yet been found in Missouri.

A general key occupying about 50 pages follows with a *List of Champion Trees in Missouri* completing the introductory remarks. The latter will be interesting to the vast audience of tree lovers.

The main body of the flora extends for 1654 pages. Extensive and elaborate keys to genera and lower taxa essentially take the place of detailed descriptions though critical characters frequently are mentioned under the species. Careful attention is given to the range and habitat in the state for each taxon and a range map is included. These may seem unnecessary for the many species having solitary or few stations since there is a county map of Missouri in the preliminary part of the book (on p. XXIX) and, in general, the counties are given in the text for rare or localized species. A valuable feature of the book is the inclusion of synonyms in cases of likely confusion. One of the most interesting aspects about the book is the rather frequent commentary on such matters as economic uses, salient points for recognition, notes on special habitat features, as well as the author's personal experience with the plants in question. These reveal, as nothing else can do, the author's competence for the task. Much of this discussion is interesting, highly informative, and doubtless will prove invaluable to students of the plants in question wherever they grow.

In general Steyermark must have followed the progress of taxonomic revision faithfully to bring the treatment up to date. The reviewer has not been able to find any references to special treatments nor is there a section devoted to bibliography. This omission seems to reflect Steyermark's

evident intention to assume responsibility, in nearly all instances, for the particular way each group is treated.

The illustrations include a large percentage of the taxa. They are all line drawings and seem to be particularly well done. On the large pages they mostly stand out very clear. The author wisely, when good illustrations have been available, has borrowed them with due acknowledgment. Usually they are placed near to the keys and descriptions but a minor deficiency is the lack of any reference to a figure in the keys or the writeup.

A comment which could apply equally to certain other recent floras or manuals concerns the handling of the two genera, *Crataegus* and *Rubus*. In *Crataegus*, Steyermark has followed recent custom and doubtless his own inclination in accepting the treatment of Dr. E. J. Palmer. The result is a sizeable aggregation of 50 species and many varieties. In *Rubus*, he seems to have done considerable pruning away of superfluous taxa much as Gleason and Cronquist did in their recent manual but nonetheless accepting some ideas about the blackberries from Fernald in Gray's Manual. One might hope that someone will make a more realistic treatment of *Crataegus*.

Certainly in most respects here is a magnificent state flora of about the magnitude of a manual. Dr. Steyermark is to be congratulated for having completed such a monumental task.

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HYDRASTIS CANADENSIS L., IN NEW ENGLAND

LEOPOLD A. CHARETTE

The Golden Seal or Orange Root is a rare plant in New England where it attains its northeasterly limits of distribution in Vermont and Connecticut.

In Connecticut it is recorded in the literature (Bissell 1900, Knowlton et al. 1918 and Bean et al. 1960) from the base of Meriden Mountain in Southington on the authority